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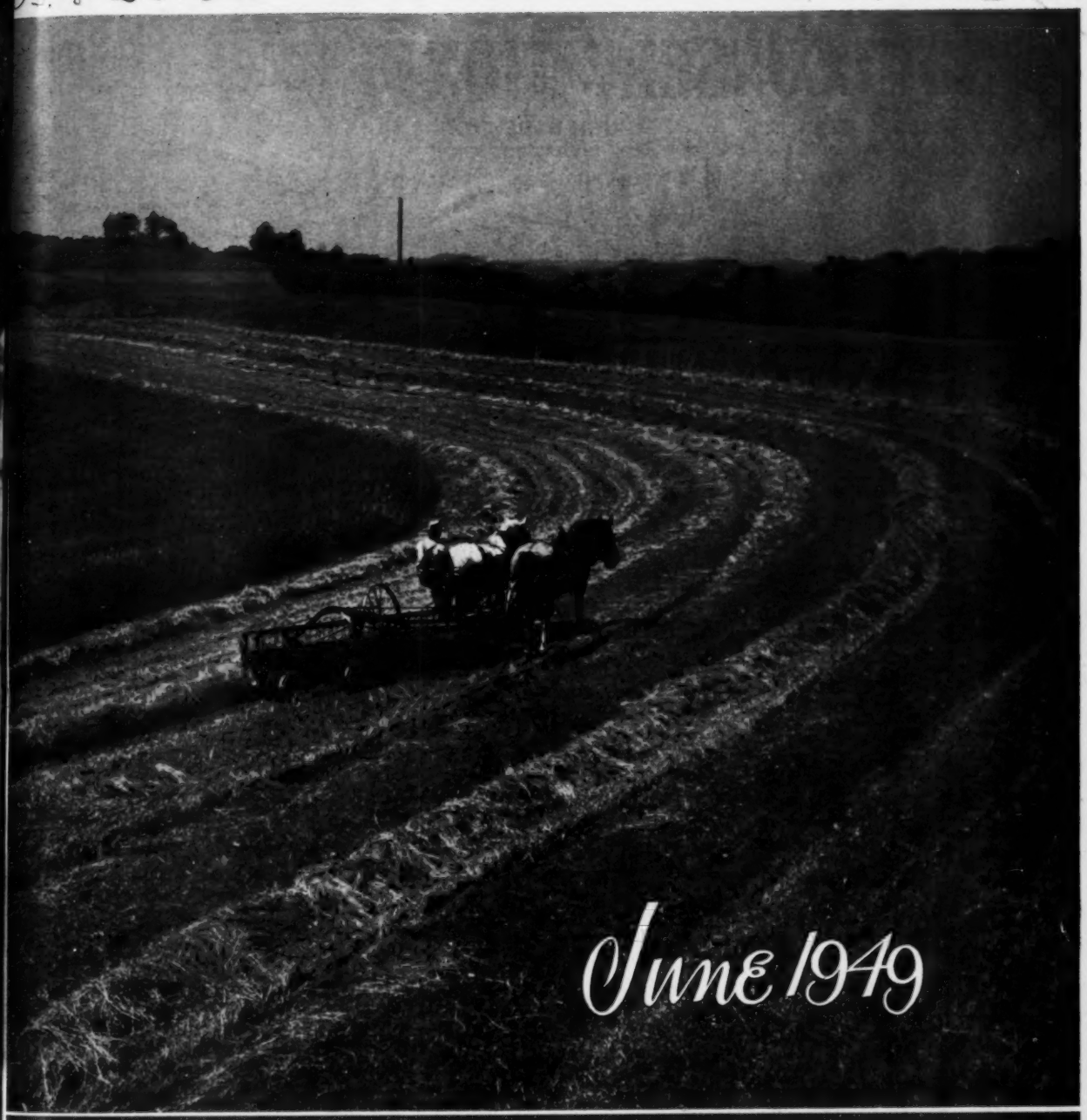

June 1949

SOIL CONSERVATION

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☆ THIS MONTH ☆

	Page
SOIL CONSERVATION EDUCATION AT OKLAHOMA A. & M. COLLEGE By Hi W. Staten	243
WADE E. ELLER—A District Profile By Cal L. Roark	244
FIRES DIE DOWN By W. W. Hull	246
BIRDSFOOT TREFOIL MAKES HILL FARM PROSPEROUS By Sidney S. Buckley	248
HAIRY INDIGO MAKES ITS BID By Paul Tabor, H. B. Helms, and C. B. Blickensderfer	250
PROGRESS IN LATIN AMERICA—Pictures	252
PAMPAS GRASS IN SOUTHERN CALIFORNIA By Paul E. Lemmon and Peter W. Taylor	255
COMPETE FROM COAST TO COAST	264
REPORTS FROM THE DISTRICTS	
Northeast	257
Southeast	259
Upper Mississippi	260
Western Gulf	261
Northern Great Plains	261
Southwest	262
Pacific	263

WELLINGTON BRINK
Editor
Art Work by
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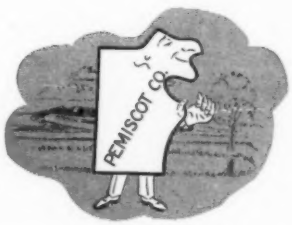


MISSOURI FACTS.—The Pemiscot County (Mo.) Soil District set a 1948 accomplishment record that includes 50 miles of field ditches and 9 miles of dragline ditches constructed, 452 acres of land leveled, 2 miles of spoilbank leveling, 732 acres of green manure crops turned under, 1,836 acres of winter cover crops, 240 acres of pasture established, 140 acres of pasture improvement work, 818 tons of limestone spread on 397 acres, 298 tons of fertilizer applied to 2,600 acres, 46 tile outlets put in to take field water to dragline ditches, 104 acres of clearing and grubbing, and 2.2 miles of multiflora-rose fence established. Other progress of the 150 cooperators included crop rotations, home improvements, and the keeping of farm records.

One district farm figured the federal cost of technical assistance by the Soil Conservation Service at one-tenth of 1 percent. Speaking as a taxpayer, he noted, "I made between $7,000 and $8,000 in 1948 and paid an income tax of about $1,000. In other words, out of $8,000 I paid only $1 for the help I got from the Soil Conservation Service in cooperation with my district."

THE COVER.—J. W. Troendly, Route 1, Stonecreek, Ohio, mowing hay on a first-year meadow strip of timothy and alfalfa mixture. The meadow strips are between strips of wheat. Troendly is a supervisor of the Tuscarawas Soil Conservation District headquartered at Coshocton. Photo by Hermann Postlethwaite.

SOIL CONSERVATION EDUCATION at Oklahoma A. & M. College

By HI W. STATEN

DR. CYRIL G. HOPKINS, in his little book, "The Farm That Won't Wear Out," published in 1913, said "It is an old saying that any fool can farm and this was almost the truth when farming consisted chiefly in reducing the fertility of new, rich land secured at practically no cost from a generous government. But to restore depleted soils to high productive power is no fool's job, for it requires mental as well as muscular energy. . . . Safe and permanent systems of soil improvement and preservation may come with intelligence—never with ignorance—on the part of the landowner. When knowledge becomes general that food for plants is just as necessary as food for animals, then American agriculture will mean more than merely working the soil for all that's in it."

Dr. Hopkins, the sage of soil scientists more than 50 years ago, advocated soil conservation and good farming methods for the purpose of holding and conserving that which nature had spent millions of years in creating. About the time Dr. Hopkins was telling about the farm that won't wear out, we here in Oklahoma and Indian Territory were cutting and slashing the native timber and plowing out the fine bluestem sod for the purpose of growing cotton, corn, wheat, and sorghums. At the present time about 2½ to 3 million acres of that fine prairie land is abandoned to poverty grasses and gullies and an equal acreage is near abandonment.

This brings me up to the main point of this story. We will whip erosion through the education of the young men and women of our country. Personnel of the teaching staff at Oklahoma A. & M. College in 1937 decided to do their "bit" in the matter of training young men in the field of soil conservation. In September 1937 a course entitled "Agronomic Soil Conservation" was offered to senior students in the School of Agriculture. Very likely this was one of the first colleges in the country to offer a course of this kind. The course was named and described in our college catalog as follows: "Field Crops 423, Agronomic Soil Conservation. Prerequisite: Senior standing. The application and effect of cropping systems, contour farming, pasture improvement and other agronomic practices in relation to soil and water conservation in Oklahoma." Specifically this course was designed for the purpose of teaching senior students good soil conservation, mainly through the practical route—the use of vegetation and good farming practices.

The first year the course was offered, 78 seniors enrolled and completed it. Each year thereafter, 1938 to 1941, an average of 125 seniors took this course. During the war only a few students were enrolled, but in 1946 the number jumped back to nearly 100 and has been increasing annually. This year more than 200 young men are enrolled in agronomic soil conservation. From 1937 to the present time more than 1,200 senior students in the School of Agriculture and 50 correspondence students have completed this soil conservation course, and a large percentage of these young men are now doing active soil conservation work with the Soil Conservation Service or the Indian Service.

Most of the students take the course because of the possibility of employment, while others have in mind using the information as county agents, vocational agriculture instructors, or farmers. Most of these young men take a Civil Service examination during the course and most of them pass with high grades. At the present time Oklahoma A. & M. College graduates are very active in soil conservation. A short while back I made a survey of over 600 students, all of whom had received their degrees either in field crops or soils

NOTE.—The author is professor of agronomy, Oklahoma A. & M. College, Stillwater, Okla.

832023—49

(agronomy) and 145, or 22 percent, are now with the Soil Conservation Service. About 86 are teaching veterans, 70 are farming, and 25 are in the Indian Service. These young men are scattered throughout the United States. The largest percentage is in Oklahoma. Many of them, however, are working in the southeastern States, Texas, Arkansas, Louisiana, and New Mexico. Some of them are soil scientists but most of them are doing farm planning or general pasture and range work. It has been found by Soil Conservation Service personnel that young college men who have had this course are about ready to go into the field without the usual preliminary training period.

Textbooks are now somewhat plentiful in this field, but these students have used the text written by the Chief of the Soil Conservation Service, H. H. Bennett. When they finish reading this very large but well-written text, they feel they have sat with the master of conservation of the world.

This course now is attracting so many students it is likely additional staff members may have to be employed for the purpose of assisting in the instruction. Considerable inquiry has been made but I have been unable to find many colleges giving much consideration to the matter of instructional work in soil conservation. One sometimes wonders why. There is no doubt that the proper managing of our soil is the most important subject in the field of agriculture at the present time. If this statement is doubted, the doubters are invited to come to one of the youngest States in the Union and see for themselves what damage can be done in 50 years.

In closing I would like to emphasize the importance of saving the soil by quoting from Bulletin No. 2, "The Destruction of the Soil in Palestine," by F. H. Taylor:

"Have you ever stopped to consider how long the population of the world could survive if there were no soil left on the earth? The answer is, just as long as the people could exist without food. All cereals and vegetables and fruits are grown in the soil. All animal products such as milk, meat, butter, cheese, and eggs come from animals and birds which live on crops grown in the soil. Thus, without soil there would be no human life. Nevertheless, in spite of man's complete and utter dependence upon the soil for his life, man has done his utmost to destroy the soil, and in our present age, this destruction has reached an unprecedented scale."

DISTRICT PROFILE

ELLER of N. C.

Every State must have a *strong* man in soil conservation. Wade E. Eller from Ashe County, N. C., an amiable person in his fifties, is such a man.

But soil and water conservation is only one of Eller's interests. This short, stocky Blue Ridge Mountain farmer takes part in many activities that contribute to public welfare in northwestern North Carolina.

After graduating with honors from Trinity College (now Duke University) in 1912, Eller taught school at Riverview for 13 years. Even then, he realized that man must work in harmony with Nature. "We mountaineers found that we had to do so if we were to stay here," he explained as we looked about us at the long steep slopes.

When the New River Soil Conservation District was organized in 1941, Eller became one of its first supervisors and still serves as the chairman of the governing body. He also was among the first to apply a complete soil and water conservation program to his own land—two farms of 187 acres.

"Soil conservation practices have increased the productivity of these farms 1,000 percent and have stopped erosion. My records prove this to be so." District Conservationist Staton McIver added that Eller practiced grassland farming with both beef and dairy cattle. He had less than 1 acre in row crops last year.

During the past year, Eller served as president of the North Carolina Association of Soil Conservation District Supervisors. It was in this capacity that he led district supervisors and county soil conservation committeemen in making a thorough appraisal of the condition and conservation needs of the 84 counties comprising the 23 districts in the State.

Using land data provided by the Soil Conservation Service and such pertinent information as other agricultural workers could supply, these farmers studied their conservation problems, county by county, until they were satisfied they had made the best assessment that could be made.

Wade E. Eller.

Now Eller envisions the time when he and other local people will supply the leadership needed to carry out the conservation program.

"We must continue," he said, "to exert our influence and such leadership as we possess until we get the fullest contribution that can be made by every agency, organization, and individual from every strata of society. We already are getting some valuable help from a number of these, but more is needed in advancing the program from local and State levels. The supervisors don't want to be the star players—we want teamwork by all who can make a contribution."

Eller is serving his third year as a member of the State soil conservation committee and is working hard toward his goal. His conception of the place of district supervisors, districts, agencies, and of soil conservation itself in the whole picture of human betterment is wholesome and inspiring. "Soil conservation is just like a warm blanket," he explained. "It covers the whole farm and countryside and is comfortable and satisfying. Its various practices and measures are interwoven to make it strong and give desired results."

But Eller is not one who thinks that conservation of our soil and water resources can be brought about by swivel-chair dreamers pushing buttons. "It must be done, for the most part, on the land by shirt-sleeve work with the farmers who own and operate the land," he said. "That is the secret of the success of the Soil Conservation Service. We are on our way to a healthy and productive agriculture."

And the North Carolinian does not speak of health loosely. He is secretary of the board of directors of the hospital at West Jefferson, president of Western North Carolina Health Association, health administrator and sanitarian of the Alleghany-Ashe-Wataugh Health Department, and does more to promote the installation of grade A dairy-farm units than any other man in that part of the State.

Wade Eller is also a member of the Methodist Church, a Rotarian, a member of the executive committee of the North Carolina Forestry Association, and a Legionnaire who served in the armed forces in World War I.

His reason for giving so freely of his time and substance to all these? "Personal satisfaction from helping others."

—Cal L. Roark.

RANGE MANAGEMENT SOCIETY.—Half the land area in the United States is used for the grazing of domestic livestock. Despite this, until recently there has been no professional society with a primary interest in the conservation and use of this vast and important part of our natural resources. Two years ago, the American Society of Range Management was formed. Two annual meetings have been held, the first at Salt Lake City in 1948, where 200 range men, most of them from the west, gathered to perfect their organization, elect officers, and adopt a constitution. During the past year, the society has grown to 800 members and expects to double its present membership in 1949. Present members come from 30 States, Alaska, Hawaii, and 3 foreign countries. Represented are nearly a dozen Federal agencies concerned with management of grazing land, chief among them such important conservation agencies as the Forest Service, the Soil Conservation Service, and the Bureau of Land Management. Many biologists, big-game specialists, and others interested in the preservation and management of wildlife and of "wild lands" have joined. There are also members from the State extension services, and heads of the range and conservation departments of leading educational institutions. Finally, and unique in this respect among professional organizations, the Society includes many of the *real* professionals, leading ranchers who earn their living in the production of livestock and in the management of grazing land. A quarterly, "Journal of Range Management," has been launched, three issues of which have already appeared.

Officers for 1949 are: president, F. G. Renner, chief, Range Division, Soil Conservation Service, Washington, D. C.; vice president, D. A. Savage, superintendent, Southern Great Plains Field Station, Woodward, Okla.; treasurer, M. S. Morris, head, Department of Range Management, University of Montana, Missoula, Mont.; and secretary, W. James Anderson, Bureau of Land Management, Department of the Interior, Washington, D. C.

SPEAKING OF KUDZU.—J. H. Shepherd, cooperator in the Richland Creek Soil Conservation District, Ky., has 6 acres of kudzu on his farm. He says his three cows and one horse "won't stay out of the kudzu long enough to get a drink of water."

Firebreaks were constructed to stop the spread of fires like this.

FIRES DIE DOWN

By W. W. HULL

WILD FIRES are a scourge to any forest, but especially to the slash-longleaf pine woods of south Georgia. Here gum farming is big business. Farmers chip the pine trees and the highly inflammable gum runs into cups attached below the wounds. If one of these forests catches fire, it's a good deal like the Biblical description of hell.

In Treutlen County 20 years ago, it was common practice to rake the straw a safe distance from each cupped tree and burn the woods each year. This removed the fuel and relieved the danger of severe wild fires. But it was hard, tedious work; and thoughtful farmers didn't like the damage the fires did to seedlings and small saplings. No young trees were coming in.

A few of the leaders decided to do two things—plant some trees and keep fires out by means of plowed furrows so nature could plant some. In the 1920's, planting trees and plowing in the woods were radical things to do—very radical. A few neighbors joined the movement, but not many.

A temporary boost to the program came when the county got an SCS-CCC camp. It planted some trees and put in a good many miles of firebreaks. But the camp was soon disbanded, the breaks were not maintained, and the fire-loss was still tremendous.

The Ohoopee River Soil Conservation District was organized in 1940. It includes Treutlen, Emanuel, Montgomery, Toombs, and Wheeler Counties. The district supervisors are Jim L. Gillis, Jr., J. E. Hall, Felder Black, J. V. Lewis, D. D. McGreggor, and J. H. Mitchell.

Early in 1945, these men met to talk about woods-burning. For 5 years they had been directing a program of soil and moisture conservation which had as its goal the proper use and treatment of each acre of land in the district. A majority of the land had been mapped and classified according to its capability for various uses.

With the aid of SCS technicians, hundreds of farmers were using these maps to develop and carry out complete, detailed plans for using each acre according to its capability and treating each acre according to its needs. Land too wet for crops was developed as permanent pasture. Steep eroded land was planted to trees, or to kudzu or sericea. Cropland was terraced and protected with cover crops in a good rotation, and so on. But woods still burned!

The supervisors decided this had to stop. They studied the problem. They found there were lots of small landowners who did not have proper

NOTE.—The author is zone conservationist, Soil Conservation Service, Spartanburg, S. C.

Firebreak in young pines.

equipment for constructing firebreaks. A large portion of the fires were on these farms.

Fortunately the district had a little money. The supervisors instructed Jim L. Gillis, Jr., chairman of the board, to locate and purchase suitable equipment. The war was still on and machinery was scarce, but he managed to buy two large farm tractors and one disk tiller. He lent the district a second tiller until one could be bought.

The supervisors employed tractor operators and put them to work. The technicians planned the location of firebreaks and plotted them on maps. PMA payments took care of part of the cost.

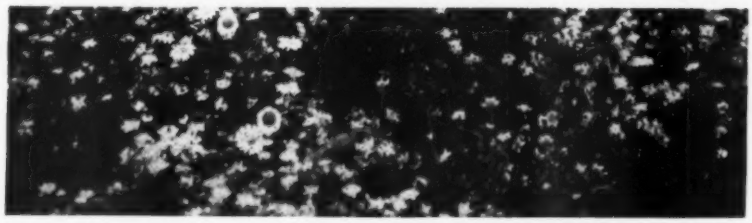
Pretty soon the Montgomery County board of commissioners, at the suggestion of Supervisor McGreggor, put a track-tractor and fire plow to work. The State Forest Service representative does most of the work of planning and directing this operation. The SCS man works closely with him. Wheeler County now has the same type equipment, operated under the same arrangement. The district also operates a 12-foot motor grader, which was lent by the Soil Conservation Service for the construction and maintenance of the large-type firebreaks.

The larger landowners are encouraged to use their own equipment, so the district tractors can work on the smaller farms. All told, more than 2,000 miles of firebreaks have been constructed. Many of these breaks have been replowed for maintenance. The program is gaining momentum. Last August and September 230 miles of new firebreaks were constructed with district equipment alone.

There are still a few fires, but the raging inferno of past years has been smothered to a dim glow. Young trees are coming in fast now. Farmers are helping nature by planting trees. Saplings and older trees are laying down a heavy layer of needles to protect and build the soil. The district has the fire phase of its conservation program well in hand.

FIRE CAUSES GULLY.—Farmers in the Southeast frequently refer to very intense rains as "gully washers," but the supervisors of Rowan County Soil Conservation District, Ky., tell about a gully-forming fire in the 1948 annual report. The gully, they report, was caused by a forest fire that burned an old rail fence many years ago, destroying the litter and decaying vegetation on the forest floor. This permitted the runoff water on the steep slope to erode the unprotected soil along the fence line. The gully is now 20 feet deep and 70 feet wide. They point to this gully as convincing evidence for the need of effective forest fire control in the district, where between 70 and 80 percent of the land is in timber. They point out that floods, too, are retarded by a good cover of leaf mold in the woods.

Birdsfoot Trefoil MAKES HILL FARM PROSPEROUS



Pure seeding of birdsfoot trefoil for seed production, on Leland H. Cooke farm. Seeding rate 8 pounds per acre, broadcast. Land treated with lime and superphosphate. That's Earl VanPelt of the Soil Conservation Service.

By SIDNEY S. BUCKLEY

OVER the last 8 years, a steady stream of visitors from far and near has come to Sunnyhill, 180-acre farm of Leland H. Cooke, above Preston Hollow, in southwestern Albany County, N. Y. They have come to learn how Cooke and birdsfoot trefoil transformed poor hill land into a productive, prosperous farm.

At an elevation of 1,400 feet, the farm has soil that varies from shallow, well-drained and droughty to poorly drained; part of it underlaid with a claypan—just ordinary glaciated acid hill soil.

NOTE.—The author is work unit conservationist, Soil Conservation Service, Cobleskill, N. Y.

Cooke told us how this change gradually came about.

"I wanted to farm," he said as he gazed over his fields. "I looked for a place to rent, but they were scarce. Finally, I found and rented this farm. Since I was born in this neighborhood, I knew its history. My wife, our baby daughter, and I moved here in the early spring of 1932. Two years later we bought it.

"It had lain practically idle for a couple of years. The buildings were in very bad shape; the man who was last on it had burned part of the barn for firewood. I came here with two cows, four head of yearlings, a pig, and some hens. I bought two horses, one for $20 and the other for $40. I paid $10 for a wagon and harness. That summer I cut hay, but it was very poor. It was so thin on some fields I couldn't see where I had raked. The whole farm was about like that—very poor."

For several years the going was tough. The first 2 or 3 years Cooke had to buy hay. The old barn could hold 30 tons, but there wasn't nearly enough hay to fill it. Part of the time Cooke worked on the town roads to help make a living.

"Our bills really hurt," he recalls, "and when I got hold of some money, I'd portion it out among those I owed to try to keep them all happy. At the general store in Preston Hollow I ran a bill for $470. If the storekeeper, Baird Elsbree, had tried to collect this bill, I'd have been cleaned out. He carried us along until things got better.

"The first year I found six to eight unusually bright green patches, from 15 to 30 feet in diameter, in the meadows and about as many more in the pasture fields. I thought it was vetch. When it was ripe, I cut it and fed it to the cows. They liked it and also liked to graze these spots after the hay was off. The ripe seed went through into the manure, and when that was spread on the meadows I began to see more of this plant in the hay.

"There was more of it on the Arnold farm across the fence. The Arnolds had been using this for some years. Patches of it grew on the farm across the road from our house, too."

We wanted to know how Cooke started producing seed. As we walked over the farm, he told the story this way:

"In the summer of 1936 when Walter Mason, Albany County agricultural agent, tested my fields for lime, I asked him what this plant was. He didn't know. Later he brought George Serviss, extension agronomist, along and Serviss called it birdsfoot trefoil. They asked me if I'd grow some seed so the college could start experiments. That's how I came to make my first seed crop that year from my fields, and also from some of my neighbors' fields across the road. I owe a lot to Walt for getting me going with birdsfoot.

"I cut the hay when the seed was about ripe, cocked it, cured it, put it in the barn, and later ran it through a threshing machine. From both places I made about 600 pounds of seed. In 1937 I made about 2,000 pounds from the two farms. Also, I sowed 10 acres for seed production."

Every year since then Cooke has made seed, as low as 250 pounds and as high as 4,600 pounds in a year. In 1948 he made only 2,100 pounds because much of the crop was lost when three hot, dry days opened the seed pods.

Putting the hay in the barn or stacking it outdoors and later threshing it, Cooke found, made poor feeding hay and took too much labor. Now he uses a combine with a separate motor to run the threshing mechanism because it gives a steady, even speed that gets more of the seed. The hay is windrowed when cut. After it has dried on top, it is turned over by hand, where the growth is heavy, to dry the other side of the windrow. In combining directly from the swath, he found, it dried out so quickly that he lost seed. He makes his easiest and best seed from the poorer fields where the growth is short.

Cooke has his third combine. After 3 year's use, he says it pays to get a new one as birdsfoot harvesting is hard on a machine. A breakdown of a couple of days at seed harvest time could easily cost more than the price of a new combine.

As we climbed the fence into the pasture, he said: "My home farm is all birdsfoot trefoil now. Erosion is no problem here because all the land is in sod. I have not plowed any here in the last 8 years. I think I can sell my plow and drill now."

Asked about his seeding and fertilizer practices, Mr. Cooke replied: "I have usually seeded with oats, using not over 2 bushels oats with 5 to 6 pounds birdsfoot trefoil and 6 pounds timothy. Where I tried seeding clear, it came in ranker and thicker the first year, but in the second and

832023—49——2

following years, there was no difference so far as I could tell. I think it better to seed with oats as the weeds are clipped when the oats are taken off. Many of my hay fields were seeded by top-dressing old meadows with manure from cows fed birdsfoot trefoil hay.

"On some of my pastures I broadcast seed by hand early in March. For the first year or two when the birdsfoot trefoil was in bloom, I could see just where I had cast the seed. Now it is a solid stand.

"My soils need 1½ tons lime for clover, according to test. When seeding birdsfood, I use 1 ton ground limestone and 300 pounds 20-percent superphosphate to the acre. After several years I top-dress with 600 pounds 20-percent superphosphate to the acre. This phosphate makes a big difference in the height and color of the trefoil. Manure makes the growth too rank for easy combining. I put it only on fields I use for hay or hay silage, not on those I intend to take seed from."

We talked about the carrying capacity of his farm, and as we came up the lane toward the buildings, he said: "I keep 26 milk cows and 14 head of young stock, mostly Guernseys and Jerseys. In 1948 they produced 189,000 pounds of milk. Soon the farm will keep 42 head of milkers. I have space for that many in the barn I have just built. The farm could carry 60 milk cows plus young stock if I had more barn room. For the last 3 years I have sold about 100 tons of hay a year. The present stock cannot make use of all the pasture.

"With the added 90 acres I recently bought, this farm requires the work of myself, one full-year man, one man during the growing season, four or five extra hands during the seed harvest period, and my 12-year-old son Laurence, some of the time."

Besides doing an outstanding job on his farm, Cooke has been a director of the Eastern New York Birdsfoot Trefoil Corporation, Inc., since 1941. As a cooperator in the Albany County Soil Conservation District he has a complete farm plan.

Two things make this farm operation successful: First, Cooke's energy and intelligent management of the farm; second, the fact that birdsfoot trefoil has proved to be an almost ideal hay and pasture legume for dairy farms under the trying conditions prevailing in this hill section.

HAIRY INDIGO MAKES ITS BID

By PAUL TABOR, H. B. HELMS, and C. B. BLICKENSDERFER

FROM ONE escaped plant in 1931 to 50,000 acres in 1948 is the record of hairy indigo in Florida!

Hairy indigo is a native of Africa and Asia. It was brought into this country by the United States Department of Agriculture in 1908, again in 1914, and for the third time in 1916. It was discarded after preliminary trials. In 1931 George E. Ritchey, agronomist of the Department and of the Florida Experiment Station, found one plant growing in a coal pile at Gainesville. He saved its seed and started new trials. Other seeds were brought in during 1934. In a few years Ritchey became convinced the plant had possibilities for Florida agriculture and became its sponsor.

In 1939 Ritchey gave two small lots of seed to the nursery division of the Soil Conservation Service. One lot, planted in central Alabama, produced seed in 1939 and 1940 but was caught by an early frost before seed matured in 1941. The other lot was planted at Brooksville in central Florida. It has continued to produce seed each of the years since. Much of the seed in Florida can be traced back to this small beginning on the Withlacoochee Land Use Project at Brooksville. From 1939 through 1942, the seed was increased on the project. In 1943 some went to the Sand Hills Citrus Demonstration Project, Haines City, Fla., for a soil-conserving cover crop in a new orange grove planted on the contour. Seed from this area was harvested and widely used on cooperating farms in the demonstration project during 1944 and 1945. Some was returned to Brooksville in the spring of 1945 when an SCS side nursery was established.

During December of 1943, District Conservationist David P. Ventulett and other Soil Conservation Service workers hand-picked seed from an experimental field at Leesburg, Fla. This was allotted to two cooperators in the Marion Soil Conservation District. Approximately 1,000 pounds of seed were produced there in 1944 and

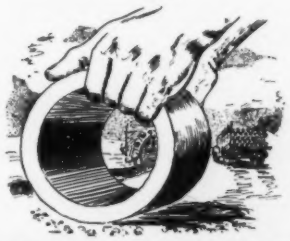
NOTE.—The authors are agronomist, regional nursery division, Spartanburg, S. C.; assistant State conservationist, Gainesville, Fla.; and SCS nursery manager, Brooksville, Fla., respectively.

Hairy indigo being grown for seed at Brooksville, Fla. Plants in foreground were clipped 4 months previously to reduce stem growth. The clipping also reduced seed production.

sold widely over the State. Much of the present supply of seed in Florida traces back to these plantings. In 1946 more than 85,000 pounds of seed were harvested by district cooperators in Marion, Alachua, Citrus, and Hernando Counties of central Florida. Larger quantities were harvested during 1947 and 1948 throughout the State and now the crop is quite common in practically every county.

Hairy indigo is widely used as a cover crop. It volunteers well in citrus groves, in corn, and after oats and vegetable crops. Farmers and ranchers are using it for supplemental grazing and hay. It is widely adapted to well-drained sandy soils of Florida and is rapidly replacing crotalaria as a summer legume cover crop. Its rank growth, wide adaptation, soil-improving ability, and good reseeding habit make it a good soil-conserving crop.

An early-maturing strain was introduced by the Department of Agriculture in 1943. In 1945 a small lot of seed furnished by Ritchey was planted on the SCS nursery in central Alabama. From the seed increase there, approximately 1 acre was planted at Brooksville in 1946. During each of the years, 1947 and 1948, about 15 acres were grown for seed production at Brooksville, and less at Americus, Ga., and Thorsby, Ala. Approximately 6,000 pounds of seed have been distributed to soil conservation districts from these nurseries. Cooperating farmers who received seed in 1947 and 1948 have produced and sold considerable quantities of seed to other farmers. This early maturing strain is being widely planted in 1949.



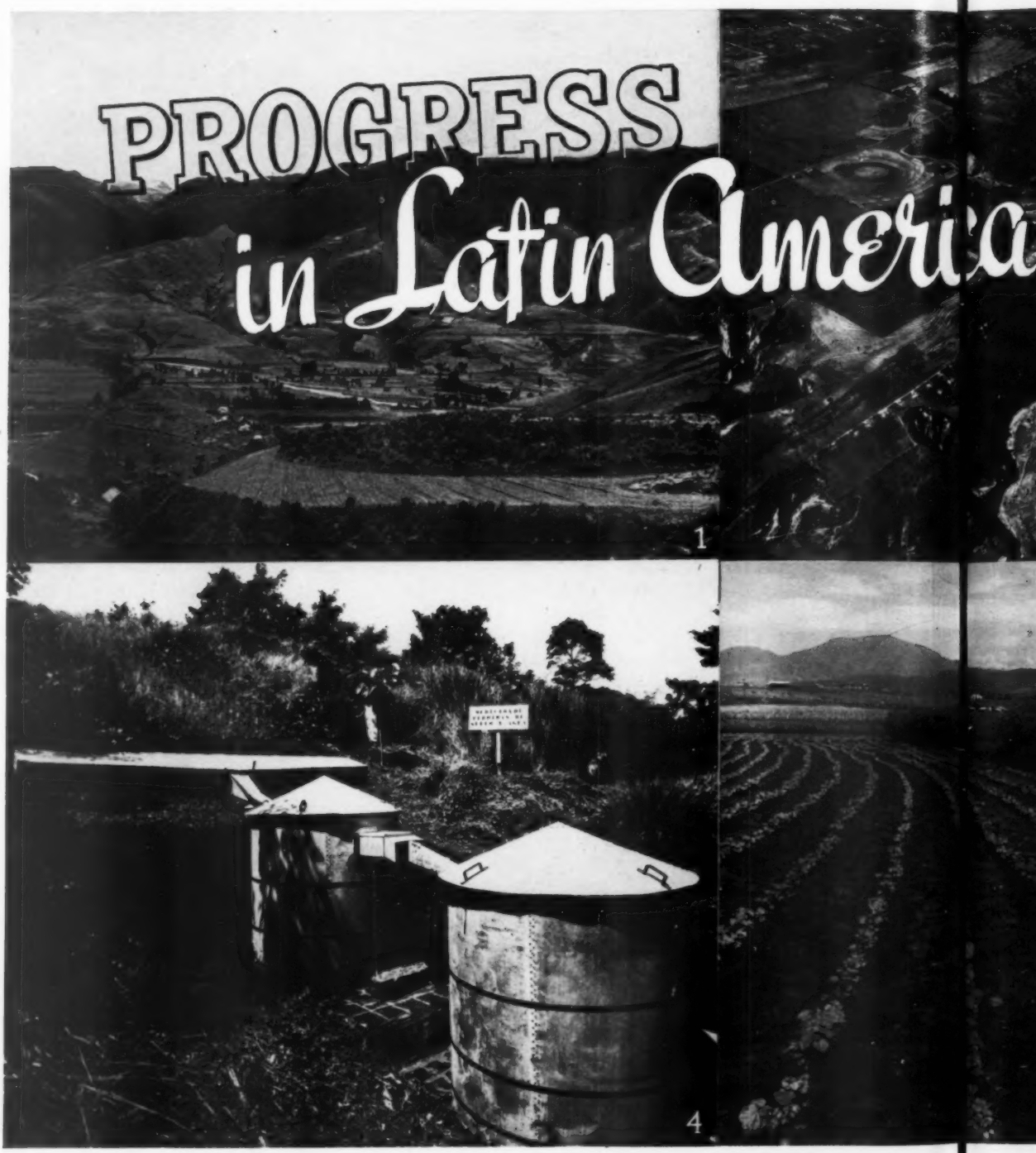
BIG TILE JOB.—With $4,500 in savings tucked under 26 cooperators' belts in 1 year, as a result of purchases of 17 carloads of tile, supervisors in the Greenbrier Soil Conservation District at Lewisburg, W. Va., have started a new series of purchases that is likely to rack up still greater savings in 1949.

There is a wide need for tile ditching. When the district supervisors obtained the use of a tile ditching machine from the West Virginia State Conservation Committee in the spring of 1948, they thought their chief troubles were over. Then they learned that local sources were not able to supply tile in the volume needed. They did, however, find that they could make carload-lot purchases which would insure delivery when and where needed, and at a price saving of 30 to 50 percent.

The 1948 program called for almost 160,000 feet of 4-, 6-, and 8-inch tile. Cooperators had 54,000 feet on hand, or had arranged to buy it locally. To supply the remainder, supervisors bought 17 carloads. Orders were spaced sufficiently ahead of time to maintain steady operation of equipment.

The tile installed on 26 farms directly benefited more than 300 acres.

The first load of tile for 1949 has already been received, and operations now under way will run through August.


PROGRESS
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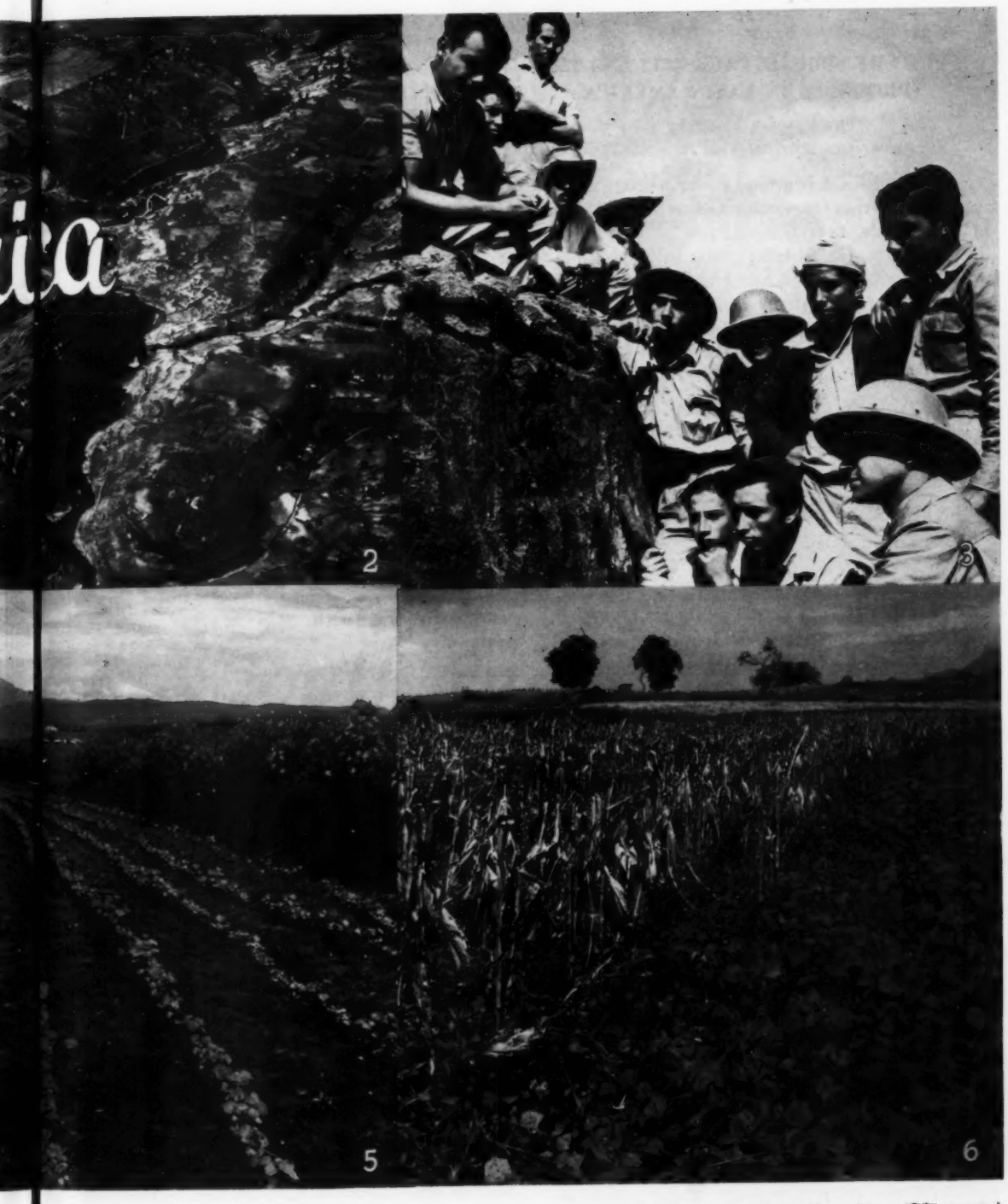


(For an explanation, turn this page.)

PICTURE SPREAD, PAGES 252 AND 253 PROGRESS IN LATIN AMERICA

(All photographs by courtesy of Office of Foreign Agricultural Relations)

Photo No. 1 is a view of strip cropping at the Peruvian Government experiment station at Kcaira, near Cuzco, Peru. Former SCS employee Jim Mitchell, who took these pictures, explains: "When I visited this station in 1944 for the purpose of shooting some of its work, I was astonished to have the station director point out the broad bands of alfalfa that show across the foreground of this photo. In answer to my questions, he said that he had never seen any such thing before but had read an article on strip cropping in SOIL CONSERVATION Magazine and this was his first try. Later, when we were in his office, he showed me his file of the periodical and I thought you would like to know that fellows like this struggle through your articles and get something from them even though they do not easily read English. The strips interested me, too, because this is near the historic Inca capitol of Cuzco and some of the terraces and ridges in the background of the picture have been there since Inca days.

"Photo No. 2 was taken near Quetzaltenango, Guatemala, at the Guatemalan experiment station. I was not able to land or get much information on the work shown but some of our staff in Guatemala City informed me that this work was done by Mario Orozco M., a Guatemalan student who was a trainee with SCS here in the United States in 1944. The view attracted my attention because it so clearly showed the typical Guatemala highland washing away on one side and the bold contours in contrast."

Photo No. 3 is of James T. Wyld (lower right) lecturing to a group of Guatemalan agricultural students who are studying soils. Wyld, a Guatemalan, is a staff member of OFAR's cooperative station Instituto Agropecuaria Nacional and spent some time in the United States in 1946 and 1947 as a trainee with SCS and ARA.

Photo No. 4. These familiar runoff measuring tanks were sent to El Salvador by SCS and are probably the first of their kind in Latin America. They are installed at OFAR's cooperative station in El Salvador, Centro Nacional de Agronomia, near San Andres. Manuel Chavez V. is a member of the OFAR staff and leads the conservation work. He was with SCS in 1944 as a trainee.

Photo No. 5. Cotton planted on the contour with a strip crop of kenaf (*Hibiscus cannabinus*), a fast-growing, fiber-bearing plant. Rice strips in the background. Cotton is 29 days old from seeding July 17, kenaf is 3 months old from seeding May 23.

Photo No. 6. Contour rotation of strips of corn at left and *Dolichos lablab* at right. Lablab is 2 months old from seeding June 6.

SCHOOL BUYS FARM.—Two West Virginia counties, Jackson and Mercer, are setting a stiff pace for other counties through progressive steps in expanding agricultural education, particularly relating to soil and water conservation.

In Jackson County, under the leadership of R. P. Kiser, county superintendent of schools, and Assistant Superintendent Sommerville, two important steps have been taken:

1. The first requirement of all freshmen vo-ag students in the two high schools, Ripley and Ravenswood, is preparation and acceptance of a complete farm conservation plan for parents' farms. This will bring 100 new plans before schools recess for the summer.

2. Establishment of a complete new soil and water conservation course for all elementary students. This will reach 2,500 boys and girls annually. Eighty percent are from farm families.

In Mercer County, where Charles H. Archer is superintendent of schools, the county board of education has purchased a 43-acre farm opposite the Montcalm high and elementary schools. It will become an agricultural laboratory for all pupils in the county.

About a third of the tract is practically level bottom land suitable for garden and demonstration plots for vo-ag, FFA and 4-H projects. A few acres, wooded hills, offer feed and cover for wildlife and opportunities for reforestation and other conservation programs. The balance is in fairly level land on a higher plateau, where all modern soil and water conservation practices can be demonstrated and studied. Part of the bottom land may become a school athletic field. All of the remainder will come under a complete farm conservation plan. It will also serve as a demonstration center for adult farmers, and for minors who lease small tracts and raise vegetables for home use. Faculty members say they can teach arithmetic, commercial and other courses through production and cost accounting that students will do in connection with their school farm practices.

Field trial planting of pampas grass at Gorman, Calif., before grazing. Weather conditions at Gorman last year supplied only 4.4 inches of rainfall; temperatures ranging from zero to 100, at an elevation of 4,000 feet.

By PAUL E. LEMMON and PETER W. TAYLOR

PAMPAS GRASS for pasture? The average person, knowing this grass, would probably say, "You're crazy." Pampas grass, which grows in clumps up to 8 and 10 feet high, has long coarse rough-appearing blades that are edged with razor-sharp saw teeth. Some who have rubbed pampas grass the wrong way with their bare hands would say it is little more appetizing than a bundle of hack-saw blades. That is where the intelligence of humans and livestock differs. If you believe, as many do, that livestock won't eat pampas grass, you will be wrong. In the Quail Lake Soil Conservation District in Ventura and Los Angeles Counties in California, cattle not only eat pampas grass, they thrive on it, although it is definitely not their first choice.

Pampas grass, *Cortaderia argentea* (*C. sellona*), was introduced in Quail Lake and other districts by the Soil Conservation Service through the planned program of the nursery at San Fernando. One of the important jobs of the nursery is to help find or develop new and better plant materials for use in soil conservation. Pampas grass as supplementary dry-land pasture is one way to relieve overgrazing pressure on California range lands and prevent erosion.

During the long hot dry season, annual grasses which now cover most California ranges wither

NOTE.—The authors are manager, southern California nursery unit and range conservationist, respectively, Soil Conservation Service, San Fernando, Calif.

and die. This dead material makes a poor and nonprofitable diet for livestock without some supplemental green feed. It is seriously lacking in protein, vitamins, and essential minerals. But in spite of its poor feed value, many operators graze the annual residue to the last visible straw, leaving large areas bare. Without a protective surface layer of plant residue to act as a sponge, rainfall, which is normally deficient anyway, runs off instead of soaking into the ground. This starts a vicious cycle. The following crop of range forage is reduced because of lack of moisture and nutrients. With the same number of stock, the rancher has no choice but to graze this range land even harder the next year, and the next.

How to get out of this vicious cycle? That's the question that has been worrying California ranchers and range specialists for many years. Do you reduce your herds to eliminate overgrazing? Do you buy out your neighbor's range land? Do you go through the expensive process of buying feed from other areas and trucking it to your ranch? Or can you grow your own supplemental feed without irrigation? The answer is not simple. But growing pampas grass for supplemental dry-land pasture is at least a long stride in the right direction.

During October of 1948 a 2-year-old dry-land pasture planting of pampas grass in the Quail Lake Soil Conservation District furnished 1 month grazing for one animal per acre. It was during a year of abnormally low precipitation. During the 1948 plant-growing season only 4.4 inches of precipitation was recorded by an official Weather Bureau Station about 4 miles away. This animal unit month per acre of forage is equivalent to about 600 pounds of good alfalfa hay. When properly fed, it means about 50 pounds of beef.

Olaf Hovden, a director of the Quail Lake District who has kept a close eye on the field-scale trial planting of pampas grass, knows that the dollar value in terms of feed produced is only a partial measure of the full worth of pampas grass. Green feed in July, August, September, and October, without irrigation, is practically nonexistent. By having it available, ranches are able to make much safer and more productive use of large areas of range land in the district. They see pampas grass as a possible means of relieving the pressure on overgrazed range lands during dry seasons, which in turn will allow them to build back to a higher carrying-capacity. Plans are already under way to expand the acreage in the district.

A good pampas grass pasture in the drier areas of southern California requires strict adherence to a few simple rules. (1) Select flat, nonerosive, cultivable areas of good highly productive soil. These can be small odd-shaped areas lying along waterways or in the valleys. (2) They must be fenced. (3) A thorough job of fallowing is necessary beginning in the early spring before any annual grasses or weeds have matured seed and continuing until planting date the following spring. This is to reduce competing weeds, store moisture, and build up nutrients for the establishment period. Tillage should be held to a minimum. (4) Plant seedlings or divisions from older plants. Best results have been obtained by hand-planting seedlings about 6 months old. These are grown in tar-paper bands 1¾ by 1¾ by 5 inches, 50 to a flat. They are planted in the field so that each plant will have about 36 square feet of ground for development. A 6- by 6-foot spacing is often used. (5) Planting should be done in the early spring after the cold weather has passed but while moisture conditions are still excellent for growth. Sometimes these plants are watered in at planting time. (6) The plants are kept clean-cultivated to save all available moisture and nutrients for the production of green pampas grass forage during the hot dry summer months. This type of crop culture is similar to that used for producing dry-land grapes. Pastures must be planted on areas where such treatment will not cause soil erosion or water loss by runoff. (7) After a full year of protection, moderate pasturing usually may be allowed. This should be taken during one comparatively short period each year, any time during the hot months of July, August, September, or October (sometimes November). (8) Plants should never be grazed closer than a 10- to 12-inch stubble-height after which complete protection is needed until the next grazing period. Application of nitrogen fertilizer or barnyard manure will increase the yield of this plant as well as most other plants.

This use of pampas grass is not new. Numerous published reports are available indicating the value stockmen are getting from this plant in Australia and New Zealand. Their methods of culture correspond closely to those enumerated above. From these published reports we have rea-

son to believe that the production on the Quail Lake planting will be greater than that shown after the plants are older and during seasons of normal precipitation. Its use as supplementary dry-land pasture in California has been suggested from time to time for many years. Most culture to date has been for ornamental purposes. The plumes have been used extensively for decorating show horses and for other such purposes.

In 1946 the Soil Conservation Service of the United States Department of Agriculture decided to find out the true value of pampas grass for dry-land pastures. Through its southern California nursery unit at San Fernando, planting stock has been produced for field-scale planting on farms in soil conservation districts throughout southern California. Actual livestock use is planned for these pastures. The planting in the Quail Lake Soil Conservation District is representative of one of these trials. It has represented one of the most favorable fields for the accumulation of information on actual livestock use because of the close cooperation of the United States Forest Service. This trial is located on land under their administration but which has been placed under agreement with the Quail Lake Soil Conservation District in an effort to help work out better range conservation.

NORTHEAST

DISTRICT RENTALS HELP TOWNS.—When the town of Bath, Steuben County, N. Y., paid off the last of a 10-year-old debt, cooperating farmers in the Steuben County Soil Conservation District had the satisfaction of knowing that the money they had paid to the town for the use of labor-saving highway machinery in installing conservation practices had been an important element in this achievement. For use of this town equipment in 1946, 1947, and 1948, the district had paid the town $4,294.65. Work was done on nearly 100 farms. In the same way, the district paid $4,098.75 to the town of Pulteney and $6,726.15 to the town of Hartsville for use of heavy highway equipment. In the Allegany-Steuben work group, involving two districts, there is extensive use of State-county-town highway equipment in a cooperative program that is considered to be one of the best in the country. Robert A. Reed, district conservationist in Steuben since 1946 and in Allegany since 1943, has helped to develop this cooperative effort.

CAGNEY COOPERATES.—Movie Actor James Cagney, who runs a farm on Martha's Vineyard off the Massachusetts coast, is getting ready to build a farm pond. Technicians working with the Dukes County Soil Conservation District have just completed the engineering. The flow from North Brook will be used and the pond will be largely for stock watering and fire protection.

STRONG BACKS NEEDED.—About 135 miles of stone walls and fences are scheduled for removal from Rhode Island farms to permit the consolidation of small fields and provide an area in which a practical job of applying strip cropping, terraces, and other erosion-control measures can be done. "There are so many stone walls and fences up here," says Russ Albright, SCS State conservationist, "that these 135 miles of walls never will be missed. In some instances the walls are so close together that fields are reduced to even less than 2 or 3 acres. They are too small to work with."

ACCORDING TO THE SCRIPTURES.—An unusual presentation of land capabilities was made by Earl L. Douglass, SCS district conservationist at Cobleskill, N. Y., when he built a talk around the Parable of the Sower (Mark 4: 3-8). This is how he told the soil conservation story:

3 *Hearken; Behold, there went out a sower to sow:*

4 *And it came to pass, as he sowed, some fell by the wayside* (Capability VIII), *and the fowls of the air came and devoured it up.*

5 *And some fell on stony ground* (Capabilities VII and VI), *where it had not much earth; and immediately it sprang up, because it had no depth of earth:*

6 *But when the sun was up, it was scorched; and because it had no root, it withered away.*

7 *And some fell among thorns* (Capability IV), *and the thorns grew up, and choked it, and it yielded no fruit.*

8 *And other fell on good ground, and did yield fruit that sprang up and increased; and brought forth, some thirty* (Capability III), *and some sixty* (Capability II), *and some an hundred* (Capability I).

WEED-FREE TOP DRESSING.—Clement Esty, a Middlesex district cooperator at Newton, Mass., has found a double-barreled substitute for manure in his market gardening operations. He tells Carl Clark, SCS work unit conservationist, that muck and peat are superior to manure in top-dressing soils. Where he uses muck and peat, soils are loose and friable and do not suffer so much from drought as the spots not top-dressed with these materials. Also, Esty finds that he has fewer weeds to fight since muck and peat do not carry weed seeds.

ROUND AND ROUND IN WEST VIRGINIA.—Strip cropping is moving ahead rapidly in the Greenbrier Valley Soil Conservation District in West Virginia.

J. H. Mitchell, a Butler Mountain farmer, near Lewisburg, reports that on his farm the practice has reduced soil loss to an absolute minimum. Strips enabled him to cut his corn acreage in half without reduction in total yield.

Ben Buck, another farmer near Lewisburg, used both contour strips and straight rows 7 years before reaching a conclusion. Now he is convinced. He's putting all his cultivated land in contour strips. "Yields are better," he says, "cultivation is easier, and soil and fertilizers are kept on the farm."

R. A. Baker, a farmer at Sweet Springs, Union County, finds that "contour strip cropping is the only safe way to crop sloping land.

"There are no gullies in my fields since I have been cultivating in strips. What little soil is lost is caught by meadow strips below. On three contour-stripped acres, I'm producing as much corn as I used to get from 7.5 acres."

FAIR ENOUGH.—New Jersey turned the tables when 11 farmers at the annual Farmers' Week at Trenton told the experts how to do conservation farming, and just what such farming means to them. These dairy, poultry, vegetable, fruit, livestock, general, and nursery-tree farmers recounted their experiences in working 2 to 10 years with complete farm conservation plans. In the closing question period, as a result of the interest aroused, the experts quizzed them for more information.

The general subject was "Does Conservation Farming Pay in New Jersey?" John C. Gilmour, Jr., of Haddonfield, was moderator. He is chairman of the Camburton Soil Conservation District.

Leland I. Warner, who farms 100 acres near Woodstown, stated that "conservation practices have given me a peace of mind that I had never known before," because they have stopped severe washing of his lands and have turned unproductive acres into acres that yield in abundance. In fields where he was getting only 10 percent as high yield as was being produced on his best fields, Warner said he is now getting 80 to 90 percent. Eighty-five percent of his farm is in contour and strips.

Roland de Wilde, Sr., who manages a 560-acre nursery near Shiloh, recalled the losing fight he had waged against erosion for 16 long years. Then he detailed how in 6 years he has been able to control 90 percent of his erosion problem through operation of his complete farm conservation plan.

In 1942 water washing off his farm near Bridgeton flooded barn buildings, loaded them with silt, and put big dents in his production, Joseph Atkinson told the experts. By protecting his 125 acres with strips, contours, terraces, permanent hay and a rotation of corn, or tomatoes and grain and hay, he has successfully tied down his soil. conserved water, and increased production.

Alfred Richmond, poultry and dairy farmer near Whitehouse Station, said that adoption of complete farm conservation practices is the principle reason why he has been successful since he quit work as an auditor and became a farmer. His 6-year plan is nearly 100 percent installed. *He adopted it because of what he had read about soil conservation in newspapers and magazines.* From what he has observed, contour farming is easier than square-field farming, and it increases production.

Lauren Nelson's 54-acre poultry farm near Lakewood was put under a complete farm conservation plan as a CCC project. All recommended practices have been installed. "For a good many years," he said, "we followed the best advice we could get through college builetins, and used crop rotations, liming, fertilizing, and many other

That's telling 'em! From the left: Alfred Richmond of Whitehouse Station, Joseph C. Atkinson of Bridgeton, Lauren N. Nelson of Lakewood, and Walter Klammer of Paterson, representing dairy-poultry farmers; Roland deWilde, Sr., of Shiloh, representing nursery tree farmers; N. J. Gilmour, presiding, chairman of Camburton Soil Conservation District, Moorestown; Robert H. DeBaun of Englishtown, and Mount Hutchinson of Allentown, representing potato growers; Raymond Adams of Burlington, representing fruit growers; and Leland I. Warner of Woodstown, and Charles Skistumas of New Brunswick, representing vegetable growers. (Photo by courtesy of New Jersey State Department of Agriculture.)

approved practices. But what happened? The rains came and washed away most of our efforts because our land was not tied down. Then we heard about contours and strip cropping and when we put these erosion-control practices to work, the other practices began to click. We're not worried any more. Conservation farming is like religion with me."

Mount Hutchinson, Freehold potato farmer, recalled his many troubles during years when rains and excess water sliced gullies and piled silt and debris on top of his vegetable crops below the slopes. He tried filling the gullies with straw, trash, and limbs from trees, but the next shower would sweep them away. In 1938 Soil Conservation Service technicians installed diversion ditches. Since then he has farmed on contour. He has no new gullies. The old ones have disappeared.

In summing up the program, Gilmour said: "Let's say, here and now, that the soil conservation program in New Jersey has come a long way and done a lot of good, from the missionary days to 1949, when these farmers told some of the experts and technicians in the audience how to conserve soil and water."

SOUTHEAST

FLORIDA DISTRICT TO RESCUE.—When a group of farmers in the Dog Creek area of East Palatka, Fla., ran into trouble with floodwaters last August, they turned to supervisors of the Putnam Soil Conservation District for help. Things started humming.

Soil Conservation Service made surveys and plans showing what could be done. First, the county opened roadside ditches. Then, private owners hired two dragline operators to dig 3 miles of open ditches which SCS technicians laid out.

This work gave relief to 948 acres of farm land. Although there have been several very heavy rains since the ditches were completed, the water moved off as planned.

One farmer in the area said that a single rain last summer cost him $650 in seed and fertilizer lost from early truck seedbeds. His share of the cost for ditching was about half this amount. He considers the money spent on ditching as mighty cheap insurance.

COVER CROP GOAL.—One hundred thousand acres of cover crops in 1949! That's the goal set by supervisors of the Coastal Plain Soil Conservation District of North Carolina for 1949. And no small wonder. Listen to this story by Cooperator S. L. Dilda of Fountain community:

"In 1947, I turned under a good crop of Austrian winter peas on a 6-acre field and planted corn. Where I turned under peas I gathered 108 bushels of corn to the acre. In an adjoining field—same kind of soil but without peas—I gathered only 57 bushels to the acre."

Dilda added, "Last year I turned under peas on two fields. One made 119 and the other 82 bushels of corn an acre. The corn planted where peas hadn't been turned under averaged 40 bushels an acre."

VETERANS BUSY.—Veteran trainees in vocational agriculture are not only receiving valuable help from SCS technicians but are making a sizeable contribution to the year's progress in applied soil and water conservation. Listen to this report of progress by the 240 veterans who started soil and water conservation plans with the Conecuh River District in Alabama last year:

Planted 425 acres with sericea lespedeza.

Set kudzu on 581 acres.

Seeded lupine on 2,993 acres, Caley peas on 214 acres, and reseeding crimson clover on 158 acres.

Terraced 2,512 acres.

5-YEAR PLAN IN 3 YEARS.—Walter Campbell, cooperating with the Carroll County (Miss.) Soil Conservation District, is converting a 1,000-acre cotton farm into a cattle farm. He has about completed his 5-year soil conservation plan in 3 years. "I have tried cotton farming and cattle farming," Mr. Campbell says. "Cattle farming calls for much less labor, which can be distributed equally throughout the year. In fact, I think cattle farming is the answer to the Carroll County hill farmers' problems."

$100 PER ACRE—PER YEAR—MORE.—Supervisors of the Laurel County (Ky.) Soil Conservation District estimate that $2,000,000 per year could be added to farmers' income by proper drainage and management of the wet lands in the county. During 1948 nearly 100,000 feet of open ditches were constructed, including 75,000 feet blasted with dynamite. More than 200 acres of swampland have been drained during the district's 2 years of operation. The supervisors contend that every acre of this formerly worthless swampland is contributing about $100 a year in additional income.

THAT COMFORTABLE FEELING.—"It's good to stand on the porch during heavy rains and see the runoff water moving slowly along the terraces and out the grassed waterways," says P. A. Ray, cooperator with the Hardin County Soil Conservation District in Kentucky. "I know from experience that the water is not taking any of my soil with it."

BANK PAMPHLET.—The People's Bank & Trust Co. of Tupelo, Miss., publishes each month a four-page illustrated pamphlet telling what farmers in northeast Mississippi are doing in conservation. It is mailed to about 10,000 farmers monthly.

FIVE YEARS AHEAD.—A complete farm conservation plan is "the best assistance a farmer can have" in the opinion of William Wester, cooperator in the Amite County Soil Conservation District, Miss. "The farm plan set up for my farm by the Soil Conservation Service technician and myself has put me 5 years ahead in my farming operations," Wester says.

ACTIVE NEGRO GROUP.—The Liberty Hill group of Negro farmers in York County, S. C., is carrying out an active soil conservattion program, according to the supervisors of the Catawba Soil Conservation District. Theodore Roddy, group leader, says, "We are trying to have a good life, and one of our main jobs is to get our land in good shape. Our land is the backbone of our farm and community life. As we improve it, we have better products, more income, better homes, schools, churches, and a more satisfying life."

COMMUNITY LEADERSHIP.—Supervisors of the North Central Alabama Soil Conservation District cite P. M. Hodges of the Mount Olive community as an example of what a good community leader can do. Hodges, small-farm owner and merchant and president of the Mount Olive Branch of the Jefferson County Sportsmen's Association, sought the assistance of the district in organizing farmers of his community to get a complete soil and water conservation plan on each farm. As a result, 14 district farm plans were made. Twenty bicolor field borders and 3 patches of partridge peas were established in 1948 as a part of the plans, and 14 more wildlife food patches are planned for 1949. The Jefferson County Sportsmen's Association is furnishing fertilizer for field borders and other food patches.

QUICK ON THE UP-TAKE.—Supervisors of the Northeast Alabama Soil Conservation District can rightly boast of how fast their cooperating farmers take hold of new soil-conserving plants. Here's why.

Cooperators now grow more than 5,000 acres of Caley peas that were first introduced to farmers of the district in 1944. At least 20,000 acres of the reseeding legume will be planted in 1949.

Starting with a small planting of button clover on one farm in 1945, they now have about 1,500 acres.

It was in 1946 that the district started sowing Kentucky 31 fescue. Now, more than 2,500 acres are covered with this perennial grass.

BANKER'S TIP.—E. F. Vickers, president of the Citizens Bank & Trust Co. of Bainbridge, Ga., discusses soil conservation with all his prospective farmer-borrowers. When one farmer told him he wasn't interested in "storybook farming," he failed to get the loan. But a short time later he got a soil conservation plan on his farm and came back to see Vickers. He got a larger loan than he originally requested. "And we both made a profit," Banker Vickers commented.

LOANS CONSERVED, TOO.—"A run-down, eroded farm is a poor financial risk," says W. C. Cooper, president of the Pelham Banking Co., Pelham, Ga. "Our crop loans are influenced a great deal by the care a man takes of his farm. We have got to protect our topsoil and use our land according to what it is capable of producing."

PRIZES FOR TENANTS.—To increase the interest of tenants in soil conservation, R. C. Singletary, supervisor of the Flint River Soil Conservation District in Georgia, and his brother, A. J. Singletary, offered a number of prizes for tenants doing the best soil conservation jobs in 1948. The prizes were awarded at a big barbecue.

HAY AND MORE HAY.—A. D. Holmes of Alfalfa Community in Alabama's Black Belt Soil Conservation District says, "Conservation farming has changed the looks as well as the yields of my farm. Three years ago I harvested 1,500 bales of hay from 40 acres. This year I harvested 2,500 bales from the same 40 acres."

FROM POUNDS TO TONS.—D. W. Dorris, farmer, seed dealer, and commissioner of the Jefferson Davis County Soil Conservation District in Mississippi, says one indication of interest in soil conservation is the amount of soil-conserving crops seed farmers are buying, such as white clover, Dallis grass, sericea, annual lespedeza, and so on. "A few years ago," he says, "we bought these seeds by the hundred pounds. During the last 2 years we have been buying them by the ton."

DAIRY FEED COST HALVED.—Huton Cranford's winter feed bill for his dairy herd was cut in half because of grazing provided by a 30-acre field of crimson clover and oats seeded as a part of his conservation plan with the Covington County Soil Conservation District in Mississippi.

Cranford also noticed that spring and summer feed bills were much less after his cattle grazed on 20 acres of Dallis grass and white clover. With a little checking, he found that these savings during the first year offset the cost of developing the pasture. So the Station Creek farmer bought 100 acres adjoining his farm to develop as additional grazing land.

TOBACCO AND TERRACES.—Tobacco and terraces go well together, according to Sam Houtchins, a supervisor of the Nelson County Soil Conservation District in Kentucky. During 1947 Houtchins planted 16 acres of tobacco in 1 week—5 on terraced and 11 on unterraced land. The unterraced land produced tobacco badly burned in the patch, lost bottom leaves, turned black, and had to be cut 12 to 15 inches from the ground. There were over 300 more pounds of tobacco per acre on the terraced land than on the unterraced land, and it brought 9 cents more per pound.

In 1948 Houtchins planted 16 acres of tobacco. This time he used 9 acres of terraced land, 4 acres with contoured rows, and 3 acres with straight rows. He said that there was a very noticeable difference in the quantity and quality of tobacco from these 3 areas.

"Tobacco on the terraced land was by far the best, with that on contoured land ranking second, and from straight rows the poorest," he reported. "Tobacco on the terraced land stayed green and didn't lose the bottom leaves during the drought."

IN CATTLE BUSINESS.—R. O. Hardwick, of St. Clair County, Ala., says that when the soil conservation district program was first set up, he didn't think much of the suggestion made to him by technicians to put some of his best bottom land in pasture and the thin upland in kudzu and sericea. But he gradually made the changes set up in his farm plan. "Before I knew it," he said, "I was in the cattle business. We are now milking around 12 dairy cows. I am practically out of the row crop business, doing less work and earning more money much easier."

REFUSED $75,000 FOR FARM.—Alfred Gervin, cooperator in the Hinds County (Miss.) Soil Conservation District, says, "I moved to my farm in 1934 with $59.80, a wife, seven children, and a determination to go to work." The district helped him to work out a farm conservation plan. "Today," Gervin reports, "my 1,200-acre farm is paid for. I just refused $75,000 for it."

AS THE TWIG IS BENT.—Commenting on the need for teaching soil conservation in schools, J. O. Dickinson, Etowah County, Ala., superintendent of education, said recently, "Conservation of soil, water, forests, and wildlife must be taught to the people and a good place to begin is in the schools."

UPPER MISSISSIPPI

UNIQUE SUMMER SCHOOL.—The tenth session of the Ohio Conservation Laboratory will be held June 20 to July 27, 1949, at Camp Muskingum, on Leesville Lake, Carroll County, Ohio. This is a program of conservation experiences for teachers through a summer field course, offered by the College of Education of Ohio State University in cooperation with the Ohio Division of Conservation and Natural Resources.

The laboratory program covers 5½ weeks and carries 8 quarter-hours of undergraduate or graduate credit. The staff includes instructors in soil, water, mineral, plant, and animal resources, and the social and economic phases of conservation, together with specialists in school curriculum and teaching methods. The staff collaborates in giving a single course which requires the entire working time of the student. Class work consists of lectures and discussion periods which utilize local problems and natural features as teaching materials. In addition, groups of students, under the guidance of staff members,

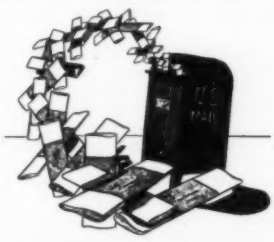
make intensive studies of small plots of ground, and thus secure first-hand experience with conservation problems. Field trips to points of outstanding interest, lectures on special topics, and healthful recreation are important parts of the program.

A number of service scholarships are available which will provide instructional fees and other costs in return for a limited number of hours of work per week.

Many conservation organizations, including sportsmen's clubs, garden clubs, and service clubs are providing scholarships to the laboratory for qualified teachers.

To apply for enrollment or secure further information, address Charles A. Dambach, director, Ohio Conservation Laboratory, Ohio State University, Columbus 10, Ohio.

WESTERN GULF



ARKANSAS READERS INCREASE.—SOIL CONSERVATION Magazine will be mailed as a gift to 221 farmers in Lee County, Ark. General Elgan C. Robertson, president of the First National Bank, and H. L. Petty, president of the Farmers and Merchants Bank, are sending 100 magazines each. Jack See and Glen Sharp of the Farmer' Supply Co. have purchased 21 subscriptions.

The board of supervisors of the South Crowley Ridge Soil Conservation District has been discussing the magazine with bankers and businessmen in Lee, St. Francis, and Cross Counties hoping to find ways to get it in the hands of farmers who need its information in order to do a better job in conservation.

SEED-HARVEST FILM.—A 10-minute film has been made of last fall's tremendous harvest of native grass seed in northeast Oklahoma. It is said to be one of the best conservation movies ever made.

The picture was taken by an amateur photographer, Charles Bradford, who works for the Public Service Co. of Oklahoma. When Bradford learned of the size and importance of the prospective grass seed harvest, he got out in the fields with his camera and filmed the whole operation. SCS prepared a script and the Texas Electric Service Co. paid for adding the voice that relates what's going on. The latter company also purchased a number of prints for use by SCS and others.

The northeast Oklahoma harvest of 3,250,000 pounds of native grass seed set a record. Probably not more than a million pounds of native grass seed had ever been harvested at one time before in the whole country. Farmers who had been tilling the soil for a couple of generations declared they never before had seen anything like the bluestem, switchgrass, and Indian grass that shot up to 6 feet, even 8 and 9 feet, across the Osage Hills and Cherokee Prairies.

The movie shows the tall grass growing, the preparations for harvest, the combines harvesting the seed, and the storage of the seed in United States Air Force hangars, barns, and other suitable places. It also brings out the significance of the big harvest in soil conservation work and the urgent need for seed to get grass planted on land rapidly eroding and contributing to floods.

It is believed there will be great demand for the film in sections of the country where the harvesting of grass seed is becoming a regular farm operation and where the seed is needed badly to regrass eroded and depleted land.

FARM RECOVERS.—Three years ago M. H. Mansfield bought a run-down farm near Knox City, Tex. Deep gullies crossed the cultivated fields and the soil that was left appeared lifeless.

Mansfield went to the supervisors of his Wichita-Brazos Soil Conservation District for help. Together, SCS technicians and the owner worked out a plan.

Mansfield planted hairy vetch and rye on the worst areas and used the crop as green manure. Chisel plows left grain-sorghum stubble in the top layer of soil to help stop erosion and add organic matter.

Terraces were built to carry water safely off the farm. Mansfield made 45 big fills in his 4½ miles of terraces. He built a stock pond to furnish water and to keep his livestock from gathering around a water tank in his pasture. He fixed up an odd area with grain and brush for food and protection for quail and other wildlife.

When he bought the farm, cotton production was one-quarter to one-half bale per acre, and grain sorghum did well to make 1,000 pounds per acre. Last year he got more than a half bale of cotton per acre and more than 2,000 pounds of grain sorghum. He is growing crops where none would grow before.

"I'm expecting even larger yields when I get the organic content of my soil built up," he says.

NORTHERN GREAT PLAINS

TREE STORY FROM MONTANA.—Cut-over forest land may be unpleasant to the dyed-in-the-wool big timber operator. But not to the John Doble family near Rexford, Mont.! Christmas trees last fall brought the family more than $6,500.

The Doble lay-out is in the Tobacco Valley Soil Conservation District. It consists of 742 acres, mostly cut-over forest land that has been restocked naturally with Douglas fir. It has no cultivated land and only a small amount of open pasture. It is in the midst of one of the most important Christmas tree producing areas in western Montana.

Operation of the farm is wholly a family affair. A few livestock are produced, but most of the income is from the harvest and sale of Christmas trees. All the Dobles—Mr. and Mrs. and the two boys—pitch in on the tree harvest. Production has ranged from 16,000 to 24,000 Christmas trees a year.

The conservation plan calls for developing the land according to its capabilities. Some 20 acres were found to be suited for cultivation. This land will be cleared of brush and drained. The added feed will permit enlargement of the beef-cattle herd to 25 head.

A schedule for improvement of harvest on the wooded land was also drawn up by SCS technicians and Doble. Some of the large trees—the so-called overstory—will be cut out and marketed. This will be for the purpose of letting more light reach the smaller trees, so they can grow faster. Thickets will be thinned, needed pruning done, and grazing regulated.

Care will be taken, Doble said, to save the seed trees. Harvesting has been set up on a rotation system. That is, the trees will be harvested from one part of the farm one year, then from another part the following year, and so on. No part of the farm is to be harvested oftener than once every 3 to 5 years, depending on the rate of tree growth.

Doble estimates that his farm is capable of sustained production of 15,000 to 20,000 trees a year, plus increased livestock production, under conservation farming.

TRUMAN C. ANDERSON.

SOUTHWEST

HAIRCUTS AND SOIL CONSERVATION.—Supervisors of soil conservation districts in Colorado are "sold" on SOIL CONSERVATION Magazine.

The Plateau Valley Soil Conservation District ordered sixteen 1-year subscriptions sent to school superintendents, a vo-ag instructor, the public library, a minister, two veteran instructors, the supervisors, members of the board of appeals, and one former board member.

In giving subscriptions, the supervisors write a letter to each recipient calling attention to the merits of the magazine and expressing the hope that he will continue to subscribe after the first year. The supervisors point out that, while they cannot subscribe for everyone in the Plateau Valley District, they hope that an annual expenditure of a few dollars eventually will result in widespread circulation in the area.

For the fourth consecutive year the Bent District has ordered 20 subscriptions for supervisors, libraries, schools, physicians, dentists, and even some barber shops!

LONG DAM.—Most of the 5-year conservation work on Oscar Appelt's 150,000-acre ranch in Pueblo County, Colo., has been completed within 2 years in cooperation with the Central Colorado Soil Conservation District. The Appelt ranch, largest in Colorado east of the Rocky Mountains, is used for Hereford cattle.

Appelt, formerly of San Angelo, Tex., purchased the ranch 3 years ago and immediately undertook an extensive soil and water conservation program worked out by SCS technicians working with the Central Colorado District.

Accomplishments include the enlargement and repair of 17 dams, the development of 5 springs, the building of 5 new stockwater dams, and a general range management program.

The largest single project has been the rebuilding of a dam on a lake near the ranch headquarters. This dam was built originally in 1902 by J. J. Drinkard, former owner. The dam is 750 feet long, containing 10,000 cubic yards of new fill. Later it will be raised two more feet. The dam is at the end of a meadow that has a drainage of only 672 acres. All of the water for the lake comes from springs in that area, producing about 1 cubic foot of water per second.

There are six large lakes on the Appelt ranch, all fed by springs. Impounded water is used to irrigate 200 acres of cultivated crops which are grown to augment the rangeland feeding of cattle.

Appelt and his son, Oscar Appelt, Jr., who grazes Herefords on adjoining acreage, have about 5,000 head of cattle. There also are about 1,200 head of antelope sharing grazing privileges on the land, which extends about 25 miles in one direction and 30 miles in the other. Most of the ranch is in Pueblo County, with a few thousand acres overlapping into El Paso County.

POJOAQUE REPORTS.—Irrigation ditch improvements which will enable more than 600 farmers in the Pojoaque Soil Conservation District in New Mexico to conserve water and irrigate more efficiently have been made within the last year, according to W. A. Williams, Jr., district chairman.

Outstanding work was done on the Mesilla, Ortegas, and Garcia ditches in the San Pedro community, including the construction of a new heading for the three ditches, the district chairman reported.

In reporting on activities in the district during the last year, Williams said that 22 additional conservation plans for indivdual farmers were prepared with the assistance of SCS technicians. More than 12,000 feet of field irrigation ditches were built, 20,000 feet of soil-saving dikes constructed, 129 small irrigation structures installed, 5 overnight storage tanks built, 87 acres bench terraced, and 8 acres of trees planted.

Williams announced that 70,000 acres were added to the Pojoaque District within the last year and that 22 landowners in the Sombrillo community have requested the State Soil Conservation Committee to have their land included.

BARLEY PAID FOR JOB.—The first subsequent crop from a 6-acre field more than paid all costs of leveling, according to Gus Laquey, who cooperates with the Tomichi Soil Conservation District, Colo., in carrying out a soil and water conservation program.

Laquey rough-leveled the field in the fall of 1947 and plowed, tilled, and finished leveling early in the spring of 1948. The cost of all operations was $168, or $28 per acre.

Barley yielded 156 bushels, or an average of 26 bushels per acre. It brought Laquey $1.25 a bushel or $195 for the crop. This was $27 more than the cost of leveling the 6 acres.

Laquey says that a few of the spots that were filled have settled, so he plans to use an automatic leveler again this spring and then plant wheat. He will convert the field into permanent pasture next year.

Under his complete conservation plan, Laquey this year will clean and straighten a drainage ditch and clear and reseed some range land.

RANGE IMPROVES.—Good grass management is raising the carrying capacity of the 14,000-acre Urraca Ranch near Costilla, N. Mex., operated by John and Betty Anderson.

About half the ranch is a mountainous area of forest and meadows, while the remainder is in sagebrush. About 5 years ago the Andersons realized that previous misuse had put the ranch in poor condition and that something needed to be done to restore the vegetation. They entered into an agreement with the Taos Soil Conservation District and a complete soil and water conservation program was planned. Since then the ranch has been very lightly stocked, with only about 200 sheep, a dozen cows, and a few horses being grazed.

A recent survey revealed that western wheatgrass is spreading over the barren areas of the sage land and that the grama grass is improving. Anderson is especially enthusiastic about the improvement in the mountain areas. Protection during the growing season has given the mountain bunch grasses a chance to regain vigor, and Anderson now estimates that forage production has doubled.

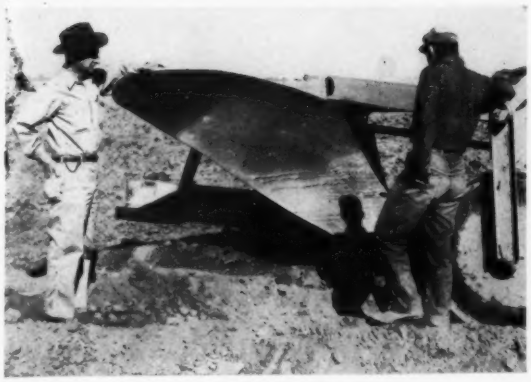
He now plans to increase his livestock in proportion to available forage. Stock numbers will be adjusted up or down to correspond with grass conditions.

The Andersons also are interested in getting game animals and other types of wildlife on the ranch. There are already elk, deer, bears, turkeys, and grouse, and sage hens have been placed in the sagebrush area. Anderson knows that game animals cannot thrive where vegetation has been removed by excessive grazing. Proper grazing, he is convinced, will provide sufficient ground cover to prevent erosion and furnish favorable food and habitat.

Other developments include the seeding of 60 acres of cropland to crested wheatgrass for spring and fall grazing. Irrigation water from La Jara Canyon is used to irrigate this grass in the spring. Fences have been constructed to give a better distribution of grazing.

Anderson also has developed a spring and built a storage tank. A well has been drilled near ranch headquarters for permanent water. Small structures and ditches on the proper grade have simplified irrigation with spring floodwater.

The Andersons plan to continue their program of range improvement so more livestock can be fed without damage. They believe that as grasses improve more water will soak into the ground and bring a higher annual forage production.



KING-SIZE FURROWS.—Deep plowing, rough tillage, knifing, in fact just about any practice that will aid water penetration is popular with farmers cooperating with the Stanfield Soil Conservation District near Casa Grande, Ariz.

When these farmers say "deep" plowing they really mean it. During the past winter they used a 4-foot plow, which reaches a depth of 24 to 30 inches, on more than 2,500 acres. They say that this deep plowing not only increases the water-absorbing capacity of the soil but also mixes the tight topsoil with the sandier subsoil common in the Casa Grande Valley. Hundreds of acres have been rough-tilled in this way preparatory to planting cotton.

About a third of Pinal County's 159,000-bale cotton crop was grown in the Stanfield area last year, the average yield being 600 pounds per acre.

The Stanfield Soil Conservation District, west of Casa Grande, includes 70,000 acres of cultivated land and petitions for the addition of 15,000 acres have been filed.

MAKING RIVERS BEHAVE.—Accomplishments in clearing and channelization of rivers to reduce flood hazards in the New River Soil Conservation District in Maricopa County, Ariz., are featured in an eight-page annual report issued by the supervisors.

This work is being done on the Gila, Salt, Agua Fria, and New Rivers in cooperation with the Soil Conservation Service, the State Land Department, the Arizona Association of Soil Conservation Districts, and other agencies.

DISTRICTS POOL RESOURCES.—The Timpangos and Nebo Soil Conservation Districts in Utah County, Utah, plan to pool their heavy earth-moving equipment this summer, according to an announcement by Earl Alleman and Bernell Hanson, chairmen.

It is felt that through this merger, operating efficiency may be improved, and better and faster service given to cooperating farmers.

Under the new plan the districts will lease their equipment out to competent equipment men who will work on the various projects by turn. All necessary equipment and materials can then be used jointly on any given project.

MAN OF MANY CROPS.—Ernest Campbell, who owns a 29-acre farm 8 miles north of Duncan, Ariz., grows just about every crop adapted to this area with one exception—cotton. Campbell has grown cotton in the past, but doubts that he will ever plant another crop.

His is probably the most diversified farm in the entire Duncan Valley. Last year he produced alfalfa hay, wheat, hegari, potatoes, corn, Sudan grass for pasture, vegetables, peaches, and apricots. Each year he manages to produce a few head of Hereford cattle, about 25 hogs, 50 turkeys, several hundred dozen eggs, and rabbits by the score.

Last year Campbell's per-acre yields included 6 tons of alfalfa, 45 bushels of wheat, 37 bushels of hegari, 232 bushels of potatoes, and 70 bushels of corn.

Crop rotations, crop residue management, green manure crops, and pasture rotations, practices he has been using ever since he started farming, are keeping his land producing well.

However, Campbell believes that he may be able to increase his crop yields through the use of more soil and water conservation practices. With this idea, he has entered into agreement with the supervisors of the Duncan Valley Soil Conservation District. Technicians of the Soil Conservation Service working with the district have helped Campbell plan a complete conservation program for his farm.

In addition to conservation practices already being carried out, Campbell's plan provides for the relocation of an irrigation canal which passes through his farm, the regrading and lining of field irrigation ditches, installation of concrete headgates, and additional field leveling.

These improvements should enable Campbell to make the most effective use of his water and lead to even better crops.

Campbell says he would like a pond which he could stock with bluegills and bass, but he hasn't been able to find room for one on his 29 acres.

PACIFIC

MULCH SOAKED UP SNOW WATERS.—In eastern Washington and northern Idaho the water went into the ground until the earth mantle underneath the snow became saturated and the surplus over and above that required to saturate the earth mantle caused serious erosion," writes George D. Clyde, chief, division of irrigation, Soil Conservation Service.

"Erosion was characterized by mud slides as well as by the ordinary type of gullying. In some areas telephone poles and fence posts actually were so unstable due to saturated soil that they fell over.

"In every instance through this area where the grain fields had been clean cultivated and no mulch left on the surface, the erosion was excessive. *Wherever stubble mulch was practiced and wherever there had been a litter left on the surface the water went into the ground and there remained sufficient stability to maintain the soil in place and no material surface erosion or mud sliding took place.*"

COMPETE from COAST TO COAST

"CONSERVATION of Our Soil Resources" is the subject of a $15,000 essay contest for young men and women through 20 years of age. It is sponsored jointly by the National Grange and the American Plant Food Council. Closing date is June 15.

Judges are the Honorable Charles F. Brannan, Secretary of Agriculture, chairman; Dr. Hugh H. Bennett, chief, Soil Conservation Service; Mrs. Malcolm Byrnes, president, National Home Demonstration Council, Ethel, La.; Dr. W. T. Spanton, chief, Agricultural Education Service, U.S. Office of Education; and Dr. M. L. Wilson, Director of Extension Work.

Albert S. Goss, master of the National Grange, says, "By encouraging the youth of the Nation to become more concerned with the conservation and wise use of our soils, we are looking to farming's future which will largely be the future of the Nation."

Clifton A. Woodrum, president of the American Plant Food Council, explains, "The Council's participation in this worth-while project is in keeping with our support of sound agricultural programs designed to give greater emphasis to adequate land-managementp ractices so essential in an economy of abundance."

National prizes offered by the American Plant Food Council are: First, a nationally known four-door sedan; second, another nationally known four-door sedan; third, $750 cash; fourth, $250 cash.

Awards in Grange States: First, $150; second, $75; and third, $50.

In States where the Grange is organized, entries are to be sent to the nearest subordinate Grange. In non-Grange States, participants are eligible only for national awards and should send their entries to the Conservation Committee, National Grange, 744 Jackson Place NW., Washington 6, D. C.

Contest judges explained that each entrant's treatment of conservation principles "may be based on information from textbooks, bulletins, motion pictures, interviews, or personal experiences, but practical application of the subject to the land in the community, State, or Nation will be given special consideration in the judging of each paper."

Entries must not exceed 800 words and will be judged on the basis of 55 points for effectiveness, 20 points for originality, 15 for practical application of subject matter, and 10 for grammatical correctness.

U. S. SAVINGS BONDS.—It is good business for a farmer to build up and maintain a financial reserve to meet emergencies. And a sound financial reserve plan helps maintain the farm conservation plan.

Dean W. I. Myers of Cornell University, chairman of the National Agricultural [illegible] it this way:

"Agriculture is a highly speculative business at best, and farm and ranch people need to have their financial reserves in the safest possible form and where they will always be readily available. Nothing meets these two requirements so well as U. S. Savings Bonds."

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